

Concurrent Session 9A: Diet Intervention Studies/Obesity

Children's boredom of snack products: Influence of shape and flavour

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Background – Repeated consumption of energy dense foods is related to child obesity. Liking and desire are important determinants of children's food choice. It is therefore important to understand how liking and desire for foods change after repeated consumption.

Objectives – This study investigated children's (n=242, 7-12 yrs-old) liking and desire for snack products over 3 weeks of daily consumption.

Design – The snack products differed in shape (small nibbles vs. large bars) and flavour (eg sweet-sour balance). Two conditions were designed: 1) a monotonous group in which children continuously consumed the same snack product across the 3 weeks, and 2) a free choice group in which children were allowed to freely choose amongst 3 different flavours of the snack products.

Outcomes – Shape influenced long-term liking, ie small nibble shaped snacks remained stable in liking over repeated consumption, whereas large bar shaped snacks with the same flavour decreased in liking. Mean desire ratings for all snack products decreased over 3 weeks daily consumption. Flavour did not significantly influence liking and desire over time. The ability to freely choose amongst different flavours seemed to decrease children's liking and desire for these products. Also, children's snack choice correlated with changes in liking, and to a lesser extent with changes in desire over time.

Conclusions – Desire rather than liking was most affected by repeated daily consumption of snack foods over three weeks. In order to increase the likelihood that children will repeatedly eat a food product, smaller sized healthy snacks are in favour of larger sized snacks. Future research should focus on stabilizing desire over repeated consumption.

Obesity is associated with increased inflammation in asthma

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Background – The prevalence of both obesity and asthma has increased in recent years, with a link between the two conditions having been suggested. We hypothesise obesity and asthma may be linked through inflammation via the innate immune response.

Objective – To assess systemic and airway inflammation in asthmatic subjects with and without obesity, compared to non-asthmatic subjects.

Design – Non-obese adult subjects (BMI 20-27kg/m²) with and without asthma (n=32 and n=9, respectively), and obese adult subjects with asthma (BMI≥30kg/m²) (n=44) were recruited via ambulatory care clinics at John Hunter Hospital, NSW. Clinical markers, systemic and airway inflammation were assessed. IL-6 and CRP were measured by high-sensitivity ELISA. Airway inflammation was measured using induced sputum total and differential cell counts.

Outcomes – Compared to non-obese asthmatics, obese asthmatics had increased median [IQR] levels of CRP (1.3 [0.7, 2.5] vs 7.8 [3.2, 13.0] mg/L, *P*<0.001), IL-6 (1.2 [0.9, 1.4] vs 2.4 [1.6, 3.1] pg/L, *P*<0.001) and mean [SD] %sputum neutrophils (36.4 [21.4] vs 52.2 [23.6] %, *P*=0.013). Obese asthmatics also had higher median [IQR] levels of IL-6 compared to non-obese non-asthmatics (2.4 [1.6, 3.1] vs 0.92 [0.71, 1.14], *P*<0.001).

Conclusion – This study suggests that obesity is linked with an increase in systemic and airway inflammation in people with asthma. Strategies targeting obesity could be useful in reducing asthma incidence and/or asthma severity.

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